

Appl. No. 10/642,313

Reply to Office action of June 6, 2005

REMARKS

Claims 1-20 are pending in the application. Claims 8-13 and 17-20 have been withdrawn from consideration in response to a restriction requirement. Claims 1, 3, 4, 14, and 16 have been amended. No new matter has been added by these amendments. Reconsideration of the application in view of these amendments and the following remarks is requested. Those amendments and remarks are believed to be fully responsive to the Office Action mailed June 6, 2005 and to place the elected claims in condition for allowance. The foregoing amendments are taken in the interest of expediting prosecution, and there is no intention of surrendering any range of equivalents to which Applicants would otherwise be entitled in view of the prior art.

CLAIM OBJECTIONS

Claim 14 was objected to because of an informality in the preamble. Claim 14 has been amended in the manner suggested by the Examiner. Accordingly, this objection is believed overcome.

CLAIM REJECTION – 35 USC §112

Claim 16 was rejected under 35 USC §112 as being indefinite. Claim 16 has been amended to remove the words "trimmed to be" that led to the alleged indefiniteness. By removing these words the claim now includes no terms that can be construed as indefinite method limitations. Accordingly, the rejection under 35 USC §112 is believed overcome.

CLAIM REJECTIONS – 35 USC §103

Claims 1, 3, 4, and 14-16 were rejected under 35 USC §103(a) as unpatentable over Boyd et al. (6,599,765) in view of Truer et al. (6,146,242). This rejection is believed overcome in view of the following remarks.

In reference to claim 1, the combination of Boyd et al. in view of Truer et al. fails to disclose or suggest the invention as claimed. First, Figure 1 of the Boyd et al. reference does not show or suggest a plug having a first section and a second section, and figure 6 does not show or suggest a probe having a first portion and a second portion, both elements of claim 1.

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There is nothing in Boyd et al. to suggest that probe 112 of Figure 1 is the same as probe 154 of Figure 6. The Examiner assumes that the same probe is used in both figures, but there is nothing in the Boyd et al. specification to substantiate that assumption. Hence Boyd et al. fails to suggest a probe having a first portion and a second portion, the second portion adapted to fit within the hollow section of the substantially transparent plug as claimed.

Second, The Examiner admits that Boyd et al. fails to disclose or suggest that the second portion of the probe is positioned flush with the top surface of the platen. To overcome this deficiency, the Examiner attempts to combine Boyd et al. with Truer et al. It is not clear that the Truer et al. reference discloses "the surface of the probe is positioned flush with the top surface of the platen (Figure 6)" as asserted. The dotted box labeled 50 may have a top surface flush with the top of the platen, but the text suggests that the position of the probe surface is determined by springs 56 as well as by adjusting screws 57 and locking screws 58 that are used to adjust the position of the window casing so that the upper surface of the window pane will be flush with the upper surface of the polishing pad (column 5, line 50 through column 6, line 16). The adjustment is in the height of the window, not the probe surface. The height of the probe surface changes as the height of the window changes.

In addition, the two references should not be combined as suggested by the Examiner. The objective and teachings of the two references are contradictory. As just noted, the Truer et al. reference seeks to place the transparent window 53 flush (parallel and coplanar with) the top surface of the polishing pad (column 6, lines 11-14). In marked contrast, the Boyd et al. reference seeks to recess element 156 (equivalent to window 53 in Truer et al.) below the upper surface of polishing pad 120 and to create a gap so that element 156 does not contact the wafer being polished.

The Examiner states that this positioning (i.e., the positioning in Truer et al.) places the probe as close as possible to the surface of the work piece, and further, that it would therefore have been obvious to set the top of the probe flush with the top of the platen. Under this reasoning, if the objective was to place the probe as close as possible to the surface of the work piece, the top of the probe could be located above the surface of the platen. There is no disclosure or suggestion in either reference that the probe surface is positioned flush with the

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top of the platen. Accordingly, claim 1 is neither disclosed nor suggested by the combination of Boyd et al. and Truer et al.

In reference to claim 3 and 4, both dependent from claim 1, both claims distinguish over the cited combination of references for at least the same reasons as does claim 1. In addition, the claims have been amended to recited "delivering a slurry" (claim 3) and "providing a slurry" (claim 4). The plurality of holes 146 and supply line 136 in Boyd et al. are not for the delivery of a slurry, but instead deliver a chemical to keep slurry away from gap 122 and raised portion 156 of the window. The combination of references fails to disclose or suggest the claimed invention.

In reference to independent claim 14 and 16, both claims have been amended to recite "slurry" instead of merely "chemical." Boyd et al. fails to disclose or suggest a manifold for delivering a slurry. In addition, as the Examiner admits, Boyd et al. fails to disclose a transmission medium having a surface flush with or substantially flush with the top surface of the polishing pad as claimed. In fact, Boyd et al. specifically teaches that the top of the transmission medium should be recessed below the top surface of the polishing pad to create a cavity between the top of the medium and the surface of the wafer being polished (for example, see any of the four embodiments set forth in the SUMMARY OF THE INVENTION). The Examiner attempts to remedy this deficiency of Boyd et al. by combining it with Truer et al. But as discussed above, the two references cannot be combined in this way because Truer et al. aligns the window with the surface of the polishing pad, the very thing that Boyd et al. seeks to avoid. Claims 14 and 16 thus distinguish over the combination of Boyd et al. with Truer et al. In addition, claim 14 now recites "the light transmitting and receiving probe having an end portion flush with the top of the platen". As explained above, this limitation is neither disclosed nor suggested by the cited combination of references.

In reference to claim 15, dependent from claim 14, that claim distinguishes over the combination of references for at least the same reason as does claim 14. In addition, there is no disclosure or suggestion in either reference that the transmission medium can be used as a registration guide for positioning the pad on the platen. In Fig. 6 of Boyd et al., the only figure that shows the transmission medium extending through the polishing pad, there is a gap around the transmission medium. Because of this gap there is a large tolerance in the placement of the

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polishing pad with respect to raised portion 156. In Truer et al. there is no disclosure that the viewport assembly is attached to the platen before the polishing pad. It seems more logical, given that the viewport assembly must be adjusted to the height of the pad, that the pad is attached first and then the assembly is attached. Accordingly, it is believed that the combination of references fails to disclose or suggest the invention claimed in claim 15.

Claims 2 and 5-7 were rejected under 35 USC §103(a) over Boyd et al. in view of Truer et al. and Tolles et al. (5,738,574). This rejection is believed to be in error for at least the following reasons. Claims 2 and 5-7 depend, either directly or indirectly from independent claim 1 and are believed to distinguish over the cited combination of references for at least the same reasons as does claim 1. None of the cited references disclose or suggest a platen or the exterior of a platen constructed of a non-metallic material. In fact, none of the cited references disclose any material from which a platen is constructed. The fact that Tolles et al. discloses a slurry supply tube composed of Teflon does not suggest that any other part of the CMP apparatus also be formed of Teflon. To extend the disclosure of Tolles et al. to suggest that the platen or the exterior of the platen be formed of Teflon or any other non-metallic material requires using applicants' own specification as a guide, and such is clearly not permitted. Accordingly, claims 2 and 5-7 are believed to distinguish over the cited three reference combination.

Claims 2, 5, and 6 were rejected under 35 USC §103(a) over Boyd et al. in view of Truer et al. and Ishida et al. (5,584,750). This rejection is believed to be in error for at least the following reasons. Claims 2, 5, and 6 depend, either directly or indirectly from independent claim 1 and are believed to distinguish over the cited combination of references for at least the same reasons as does claim 1. Although Ishida et al. discloses a surface plate 8, made of a non-metallic material, that is attached to the upper surface of platen 4, that reference does not disclose or suggest that the platen be constructed of a non-metallic material (claim 2) or that the exterior of the platen be constructed entirely of a non-metallic material (claims 6 and 7). As discussed in paragraph [0039] of the specification, one of the advantages of the platen of the instant invention is that non-metallic material can be selected that resists corrosion. The surface

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plate of Ishida et al. does not protect, for example, the edges of the platen as does the instant invention.

ART CITED BUT NOT RELIED UPON

The art cited but not relied upon has been considered, but is not thought to be relevant to the invention as claimed.

CONCLUSION

In view of the foregoing amendment and remarks, claims 1-7 and 14-16 of the present invention are believed to distinguish over the cited art and to be in condition for allowance. Such allowance is therefore earnestly requested.

Should the Examiner have any questions or wish to further discuss this application, Applicants request that the Examiner contact the Applicants' attorneys at 480 385-5060.

If for some reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment on this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

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Dated: July 11, 2005

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